Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1-10. (Cancelled)

11. (Previously Amended) A reactor comprising:

(a) an outer wall;

(b) a plurality of heat exchanger panels arranged within the outer wall at an angle thereto such as to extend inwardly to an interior of the reactor, wherein each of the heat exchanger panels comprises a printed circuit heat exchange (PCHE) plate;

(c) a plurality of reaction zones separated by the heat exchanger panels but in fluid communication with one another via the heat exchanger panels, and forming thereby a segmented production flow path; and

(d) baffles located within each reaction zone, wherein each of the baffles extends from a heat exchanger surface of an associated one of the heat exchanger panels to define a boundary for the associated reaction zone and to cause the production flow path to extend between a central part of the reactor to an outer peripheral part thereof.

12. (Previously Amended) A reactor according to claim 11, wherein the configuration of the production flow path is that of a spiral.

13. (Previously Amended) A reactor according to claim 11, further comprising two concentric catalyst containment screens, between which a reaction zone is contained.

14. (Previously Presented) A reactor according to claim 11, wherein the outer wall is curved, the reactor is cylindrically shaped, and the heat exchanger panels are arranged about a central point to thereby define a plurality of sectors each containing at least one reaction zone.

15. (Previously Presented) A reactor according to claim 14, wherein each sector is divided into a plurality of reaction zones by the baffles.

16. (Previously Presented) A reactor according to claim 15, wherein each of the baffles is arranged to extend from a heat exchanger surface to define a boundary for an associated reaction zone.

17. (Previously Presented) A reactor according to claim 15, wherein the baffles are curved.

18. (Previously Presented) A reactor according to claim 15, wherein the baffles are straight.

19. (Previously Presented) A reactor according to claim 15, wherein the baffles are corrugated.

20. (Previously Presented) A reactor according to claim 14, wherein the heat exchanger panels are arranged radially about a longitudinal axis of the reactor.

21. (Previously Presented) A reactor according to claim 11, wherein the reaction zones comprise catalyst beds.

22-35. (Cancelled)

36. (Previously Added) A reactor according to claim 11, wherein the configuration the production flow path is substantially that of a spiral.

37. (Previously Added) A reactor according to claim 11, further comprising two catalyst containment screens, between which a reaction zone is contained.

38. (New) A reactor according to claim 11, wherein

the outer wall comprises a containment shell;

the plurality of heat exchanger panels are spaced circumferentially around a longitudinal axis of the containment shell so as to form reaction zones therebetween;

a plurality of catalyst beds are disposed within the reaction zones;

and the baffles comprise a plurality of baffles that are located in the containment shell to form at least one flow path in the catalyst beds, wherein the flow path contains a plurality of segments that are bounded by the panels and that are connected with one

another via passageways in the panels, and wherein additional passageways are formed in the panels for the passage of a heat exchange medium therethrough.

39. (New) A reactor according to claim 38, wherein

the containment shell is at least essentially cylindrical in shape,

each of the panels extends at least generally radially with respect to the longitudinal axis,

the baffles are arranged relative to one another and to the panels to cause the flow paths to be at least generally spiral-shaped.

40. (New) A reactor according to claim 39, wherein the baffles are curved.

41. (New) A reactor according to claim 39, wherein the baffles are straight.

42. (New) A reactor according to claim 38, wherein each of the additional passageways has an inlet in fluid communication with a source of the heat exchange medium and an outlet.

43. (New) A reactor according to claim 42, wherein the additional passageways open into an inlet of the flow path, thereby permitting feed reactants to be used as the heat exchange medium.

44. (New) A reactor according to claim 38, wherein a first manifold communicates with the inlets of the additional passageways and a second manifold communicates with the outlets of the additional passageways, one of the first and second manifolds surrounding the catalyst beds and the other of the first and second manifolds being surrounded by the catalyst beds.